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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/696,813	10/25/2000	Apostolos Voutsas	SLA 0468	3618

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EXAMINER

NGUYEN, KHIEM D

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 04/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/696,813

Applicant(s)

VOUTSAS ET AL.

Examiner

Khiem D Nguyen

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 9-11 and 13-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/25/00 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of claims 1-8 and 12 in Paper No. 5 is acknowledged.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 3, 4, 5, 6, 7, 8, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. (U.S. Patent 5, 569, 610) in view of the applicant's admitted prior art (AAPA) and Venkatesan et al. (U.S. Patent 5, 371, 381).

Zhang teaches a method of fabricating a polysilicon film, comprising the steps of  
(See figures 1A-1E, 2A-2E, 4A-4E, and 5A-5E and col. 1, line 20 to col. 11, line 50):

providing a substrate;

depositing an amorphous silicon film 12 by the process of physical vapor deposition such as sputtering on the substrate;

introducing a metal catalyst into the amorphous silicon film; and

annealing the amorphous silicon film with an excimer laser to form a crystallized region in a liquid crystal display by pure metal induced crystallization where each thin film transistor (TFT) is to be fabricated.

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Zhang teaches introducing metal catalyst into the amorphous silicon film but fails to teach the introduction of metal catalyst into the amorphous silicon film is done through a barrier layer having windows as required by present 12.

However, AAPA teaches a method of fabricating a poly-silicon film in which the metal catalyst is introduced into an amorphous silicon film through a barrier layer having windows. See page 3 of the Background of the Invention.

It would have been obvious to one of ordinary skill in the art of making semiconductor devices to introduce the metal catalyst into the amorphous silicon film through a barrier layer having windows in Zhang's method because that allows the formation of TFT devices. See page 3 of the Background of the Invention.

Zhang fails to teach that the amorphous silicon film is deposited using Argon as a sputtering gas as recited in present claims 5 and 6.

However, Venkatesan teaches a method in which an amorphous silicon film is formed by sputtering using Argon gas. See col. 6, lines 5-20.

It would have been obvious to one of ordinary skill in the art of making semiconductor devices to incorporate Venkatesan's teaching into Zhang's method to form the amorphous silicon film by sputtering using Argon gas because in doing so the amorphous silicon film having uniform concentration can be obtained. See col. 6, lines 25-30.

Venkatesan fails to teach the range of the Argon content in the amorphous silicon film and in the crystallized region as recited in present claims 5 and 6.

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However, it would have been obvious to one of ordinary skill in the art of making semiconductor devices to determine the workable or optimal ranges for the Argon content through routine experimentation and optimization to obtain optimal or desired device performance because the Argon content is result-effective variable and there is no evidence indicating that the Argon content is critical and it has been held that it is not inventive to discover the optimum or workable ranges of a result-effective variable within given prior art conditions by routine experimentation. See MPEP 2144.05.

Zhang fails to teach the ranges for the annealing temperature and time duration as recited in present claim 7.

However, it would have been obvious to one of ordinary skill in the art of making semiconductor devices to determine the workable or optimal ranges for the annealing temperature and time duration through routine experimentation and optimization to obtain optimal or desired device performance because the annealing temperature and time duration are result-effective variables and there is no evidence indicating that the annealing temperature and time duration are critical and it has been held that it is not inventive to discover the optimum or workable ranges of a result-effective variable within given prior art conditions by routine experimentation. See MPEP 2144.05.

Zhang fails to teach the front length of a crystallization growth produces in the annealing step as recited in present claim 8.

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However, it would have been obvious to one of ordinary skill in the art of making semiconductor devices to determine the workable or optimal range for the front length for a crystallization growth through routine experimentation and optimization to obtain optimal or desired device performance because the range for the front length for a crystallization growth is result-effective variable and there is no evidence indicating that a crystallization growth is critical and it has been held that it is not inventive to discover the optimum or workable ranges of a result-effective variable within given prior art conditions by routine experimentation. See MPEP 2144.05.

#### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D Nguyen whose telephone number is (703) 306-0210. The examiner can normally be reached on Monday-Friday (8:00 AM - 5:00 PM). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-4082 for regular communications and (703) 746-4082 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

K.N.  
April 5, 2002

  
LONG PHAM  
PRIMARY EXAMINER